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LAGUNA BEACH GENERAL PLAN

Noise Element

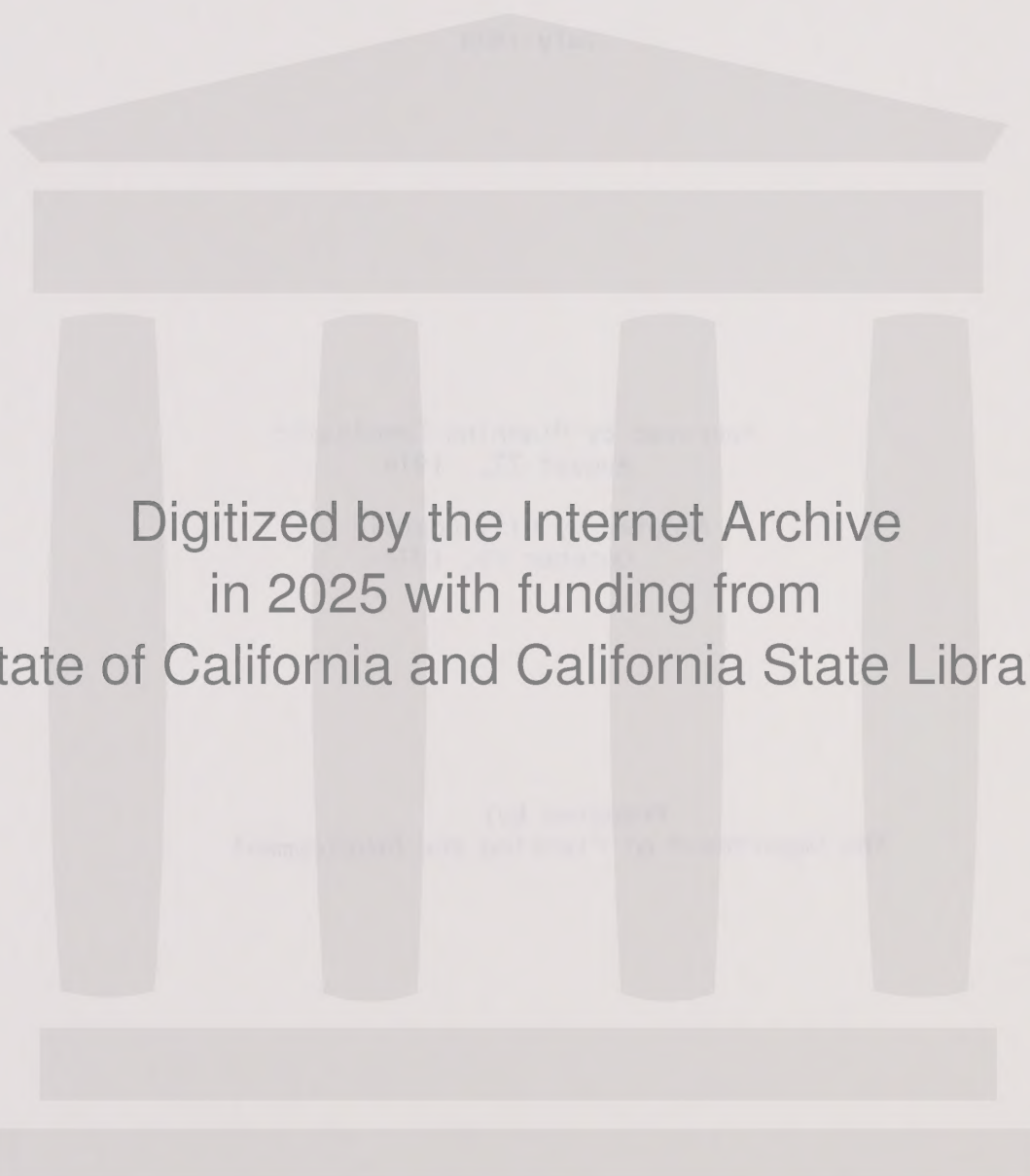
LAGUNA BEACH NOISE ELEMENT

July 1974

Approved by Planning Commission
August 27, 1974

Adopted by City Council
October 16, 1974

Prepared by:
The Department of Planning and Development



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NOISE ELEMENT

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SECTION 1.0: INTRODUCTION

Lacking the visible qualities of air and water pollution and the frightening rhetoric applied to the population explosion, the noise level in our society has been allowed to increase at a rate of one decibel a year over the past 25 years.¹ The increase in noise levels can be directly attributed to the rampant population growth accompanied by increases in construction, travel (both automobile and air), and a spiraling increase of consumer use of home entertainment equipment, workshop tools, power mowers and the like. People have come to accept noise as a part of the urban environment.

Many of the noises are acceptable - such as the sound of the crashing of surf against the beach, rustling of wind through trees, or the drumming of rain on a roof. People rarely complain about the natural sounds in the environment, while man-made noises are often quite irritating. The grinding and pounding of construction noise, the roaring of automobile engines, and the clattering of industrial noises are all noise pollution - pollution as real as fouled air and water.

Noise is nothing other than a useless and often harmful by-product of sound. Noise affects people, not land. Unlike those living in rural areas, urban dwellers can rarely escape noise. But the time for urban society to put an end to noise pollution has come. Section 21001(b) of the California Environmental Quality Act of 1970 says we should take all action necessary to provide "freedom from excessive noise".² The question is whether or not we will be able to preserve the basic attractions of urban life without giving in to the gradual encroachment of noise - unwanted sound - into our daily activities and lives.

SECTION 2.0: NOISE THEORY

Sound is nothing more than the vibration of molecules of air moving in what are termed "wavelengths". This vibration has two basic characteristics: frequency and volume.³ Frequency relates to the length of the wavelengths. A low frequency sound, like the noise of a bass instrument, consists of slow vibrations with long wavelengths and produces a deep rumbling sound. High frequency sound, like that from a flute or piccolo, is made by fast vibrations which have short wavelengths. This frequency, or pitch, of sound is measured by the rate of vibration in cycles per second or "hertz". The human ear can hear frequencies ranging from a low of about 20 to a high of 20,000 cycles per second.

The second measurement of noise is the volume and is measured in decibels (indicated as dB). The decibel is a unit proportional to the logarithm of sound pressure (Measured in dynes/square centimeter). The human ear can hear volumes ranging from 0.0002 to beyond 2000 dynes/sq. cm., or converted to decibels, 0 to greater than 140 dB. Figure 1 shows some typical noises and their dBA ratings.⁴

Sound usually consists of more than one frequency. Sound that contains only one frequency is called a "pure tone" and can be annoying (similar to the screech of chalk on a blackboard). But humans can't hear all frequencies equally well.

In order to account for the discrepancy between actual and perceived sound when measuring noise, frequencies have to be weighted. The "A" weighting scale has been developed to measure noise as we hear it by amplifying the frequencies between 1000 and 5000 Hz, and dropping frequencies above and below that range. This scale is expressed dBA.

Some "rules of thumb" about noise follow:

1. A 3 dB variation is the minimum change detectable to the human ear.
2. An increase or decrease of 10 dB will sound like a doubling or halving (respectively) of the noise.
3. Doubling the distance from a single point noise source (such as a jackhammer) will reduce the noise 6 dB.
4. Doubling the distance from a linear noise source (such as a busy highway) will reduce the noise 3 dB.
5. Because they are logarithmic, decibels do not add like numbers. Adding 50 dB to 50 dB gives 53 dB, not 100 dB. Doubling the sound power or source will always cause the decibels to increase by 3.

SECTION 3.0: CONTROLLING NOISE

3.1 Local Noise Sources

Noise pollution comes from many sources, and the most severe impact is upon the residential sectors of Laguna. The most widely distributed source of sound in any community is not the fixed-point source, but the engine powered transportation vehicle. The most prevalent noise sources are highway vehicles: cars and trucks. The most intensive and severe source of noise in Laguna are the jet aircraft and helicopters from the El Toro Marine Base and private aircraft flying along the coast. Other sources we have to contend with are construction activities, animals, and general

FIGURE 1: RELATIVE NOISE LEVELS AND PUBLIC REACTION

LETHAL LEVEL	180	_____	
	170	_____	
	160	_____	
	150	_____	jet aircraft at 200 feet
	140	_____	pneumatic riveter;
	130	_____	air raid siren
THRESHOLD OF PAIN	120	_____	rock music with amplifiers
	110	_____	power mower
		_____	motorcycle;
	100	_____	subway train
		_____	sports car;
DANGER LEVEL	90	_____	heavy truck4 times as loud
	80	_____2 times as loud - Letters of protest
			- Complaints likely
	70	_____	busy street.....Reference - Complaints possible
			- Complaints rare
	60	_____	normal conversation.....1/2 as loud - Acceptance
	50	_____	quiet urban street.....1/4 as loud
	40	_____	quiet room, residential area
	30	_____	tick of watch (at 2 feet)
	20	_____	whisper
THRESHOLD OF HEARING	10	_____	leaves rustling in breeze
	0	_____	

"interaction" noises produced by leisure and outdoor activities. Laguna is fortunate that industrial activity has accounted for only a minor source of noise. In many larger cities this is a major source of noise, overriding vehicular noise in industrial neighborhoods.

Transportation noise sources are categorized by their facilities. There are 71 miles of streets in Laguna, and the vehicles using these streets all contribute to the total noise level. The noise levels from the volume of road traffic are highest during the day, especially during the morning and afternoon peak flows. Noise levels reach their lowest values at night when traffic on local and collector streets is virtually absent, and arterial traffic is extremely light. At this time, automobiles change from ambient noise to intrusive noise. Yet the problem is not limited to the outside - household noise is beginning to reach harmful levels. We are using more tools and appliances and as their power has increased, so has the noise. Noise in offices from copying machines, typewriters, and telephones often surpasses harmful levels. The World Health Organization reported that before 1939 office noise was costing business \$2 million per day through decreased efficiency; today that figure is placed at \$4 million per day.

Because noise control becomes highly involved with technical research and because noise does not respect jurisdictional boundaries, the control and abatement of many noise sources has been pre-empted by the State and Federal governments, leaving little to the local governments. Figure 2 indicates the current responsibilities for noise controls.⁵ Laguna Beach can control construction noise, amplified sound, fixed noise sources, loud or unusual noises, and may regulate the use of certain types of vehicles in town. The city can also act as advocate on other noise controls, either by encouraging enforcement or encouraging that stricter regulations be enacted.

3.2 Establishment of Acceptable Noise Levels

Guidelines developed by the Council on Intergovernmental Relations for the preparation of the noise element suggest that local govern-

Figure 2: Summary Analysis of Jurisdictional Responsibility in Noise Control

	AIRCRAFT	MOTOR VEHICLE	NOISE IN GENERAL
FEDERAL	<p>Noise Control Act of 1972, EPA to propose noise control regulations for aircraft, amends S 611 FAA Act of 1958, asserts that FAA and EPA pre-empt local control (U.S.C. 1973)</p>	<p>-Federal Aid Highways Act, P.L. 91-605 directs Secretary of Transportation to make standards for highway noise control; promulgated in PPM 90-2 of February, 1973</p> <p>-NCA 1972, regulates noise from surface carriers and motor vehicles engaged in interstate commerce.</p>	<p>-Walsh Healy Act applies noise standards to Fed. contracts. Occupational Safety and Health Act applies noise standards to businesses affecting interstate commerce.</p> <p>-NCA 1972 gives EPA authority to prescribe standards for new products:</p> <ul style="list-style-type: none"> + construction equipment + transportation equipment + any motor or engine + electric/electronic equipment also label noise emitting or noise abating equipment.
STATE (California)	<p>-Subchapter 6. Noise standards, Department of Aeronautics. Regulate noise for all aircraft operations to the extent not already limited by federal law.</p>	<p>-Motor Vehicle Code regulates noise limits for new vehicles and all motor vehicle operation.</p> <p>-Cal. Streets and Highways Code S 216 regulates noise within schools near freeways</p> <p>-Harbor and Navigation Code S2:654.05 regulates noise emission from motorboats in or upon inland waters.</p>	<p>-Division of Industrial Safety publishes noise regulations.</p> <p>-S 415 Penal Code prohibits loud and unusual noise that disturbs the peace.</p> <p>-Environmental Quality Act encourages local agencies to control environmental quality.</p>
LOCAL	<p>-Airport authority as proprietor may impose curfew. (Issue has yet to be resolved in courts.)</p>	<p>-Local jurisdiction may enact regulations for off-highway motor vehicles, refuse vehicles and sound trucks.</p> <p>-May regulate the use of roads and highways based on noise considerations.</p> <p>An example of this would be the establishment of truck routes.</p>	<p>-May enact ordinances to control:</p> <ul style="list-style-type: none"> + construction noise + amplified sound + fixed noise sources + loud/unusual noise + other noise sources whose control is not pre-empted by state or federal government.

ments establish noise levels for various types of land use. The definition of "acceptable" is left to the local agency preparing the plan. This can give a wide range of acceptable levels, as community consideration will vary widely from one area to another.

There are two basic methods available to determine community noise levels: either by community agreement or by health standards. Community agreement is based upon the responsiveness of people to different levels of noise. The right-hand column of Figure 1 illustrates the trends of public reaction to peak noise levels within residential neighborhoods. The Orange County Health Department, in developing its current noise ordinance, surveyed noise complaints and measured the noise source to arrive at a base level from which to establish noise intrusions. This information is probably the most useful in establishing community noise levels.

The other available method is the use of health standards. Because the sense of hearing is so susceptible to damage, most attention to noise has emphasized hearing loss. Investigations into other illnesses however, indicate correlations between noise exposure and other physical deteriorations. Heart diseases, stress, and mental illness have all been linked to the increasing noisiness of the environment. Figure 3 shows a summary of the health effects of noise.⁶

FIGURE 3: HUMAN EFFECTS CRITERIA FOR NOISE CONTROL

<u>Objectives</u>	<u>Noise Levels at Which Harmful Effects Begin To Occur, dBA</u>
Prevention of Hearing Loss	75 - 85
Prevention of Extra-Auditory Physiological Effects	65 - 75
Prevention of Speech Interference	50 - 60
Prevention of Interruption of Sleep	45 - 50
Satisfying Subjective Preference	35 - 45

When considering noise and control of sources in Laguna there are two major areas of concern: the residential neighborhoods and the commercial/industrial areas. The ambient noise level of these

areas has already been determined by the automobile traffic over which is a noise the city has no control. Any other noise sources should not be allowed to increase the existing levels. By establishing the ambient noise level as the base, the city will be divided into logical quiet zones instead of arbitrary designations.

Intrusive noises are as important a consideration in defining the ambient or background noise level. The more often a noise occurs, the bigger part it has in determining the ambient level. The less it occurs, the smaller the effect it will have on the ambient level. Appendix 2, the sample noise survey, illustrates this concept: If an intrusive noise seldom occurs (i.e., 10 minutes out of 24 hours) it is generally accepted that it can be louder than the background noise level. Most new noise ordinances, including Orange County's, utilize this concept of time-weighting on noise levels.

SECTION 4.0: GOALS AND POLICIES

The goal for noise pollution control is to promote, conserve, and restore Laguna's natural quiet and tranquility for the preservation and enhancement of the environment, and for the health, wellbeing, and enjoyment of present and future residents and visitors. (Laguna Beach Conservation Element)

1. The City should make all reasonable efforts to limit the effects of noise sources over which control has been pre-empted.
 - a. Traffic Levels. Because the noise level in Laguna is primarily determined by the automobile and vehicular traffic, this can't be a quiet city until the cars are removed or noise controls on the auto are increased. Every reasonable effort should be made to remove traffic-generated noise. The City should actively pursue and participate in programs which will reduce traffic levels on Coast Highway and other major roads where noise levels are already unacceptable. Particular attention should be paid to reducing truck traffic wherever possible. Noise levels as well as traffic levels should be used in determining the capacity of any street.
 - b. Enforcement. The Police Department should enforce to the maximum extent all provisions of the California Motor Vehicle Code relating to noise and should be provided with any noise monitoring equipment necessary for that purpose.

- c. Traffic Flow. Stop and go traffic is a major noise generator on any street. The City and the State Department of Transportation should evaluate traffic flow patterns along Coast Highway to determine the best means of eliminating unnecessary stops. The signalization should be synchronized to provide as smooth a flow as possible with signs posted at the ends of town indicating the speed in miles per hour at which the signals are set.
 - d. Circulation Interfaces. Interfaces and conflicts between pedestrian and automobile traffic should be inventoried and designs prepared and implemented which will provide their elimination.
 - e. Circulation Alternatives. Laguna should encourage further development of pedestrian, bicycle, and transit networks throughout town and inter-connecting with county routes as a means of reducing automobile traffic.
 - f. Residences in High Noise Areas. Residential construction in high noise areas should be evaluated considering the effects of the noise on the occupants. Development should not be allowed until interior noise levels can be reduced to 45-50 dBA. If accomplishing this requires closing of windows, then an adequate air circulation system shall be provided. Exterior open spaces should be designed and located in such a manner as to protect them from excessive noise. Barriers or walls should not be considered the only attenuation if they will create unsightly streets and tend to echo the noise source.
 - g. Aircraft Overflights. Aircraft noise becomes louder and more irritating as the frequency of flights increases. Some of the flights are generated directly by takeoffs and landings from the El Toro Marine Base and others are from private aircraft along the coast. The City cannot regulate or legislate on these flights, but cooperation with the military base and active pursuit of Federal legislation regulating military flights which can aid in reducing noise levels is the first step that has to be made.
2. Ordinances should be enacted and enforced by the City to eliminate as many other noise sources as possible.
- a. Ambient Noise Levels. No commercial or industrial activity should be allowed to exceed or increase the ambient noise level of a neighborhood. Ambient noise level should be defined as L_{90} , or that level of noise

which is exceeded 90% of the time. Because noise levels in Laguna are primarily established by automobiles, the City should insure that when automobile noise is gone, the noise of the city will be gone also. This can be handled through the EIR process although it need not be. The project applicant can consult an acoustical engineer to perform a noise survey and determine the L_{90} . Plans can be checked by the acoustical engineer to insure that no noise emitted will exceed L_{90} .

- b. Enforcement. Where monitoring or public complaints show that acceptable noise levels are being exceeded and that a noise problem exists, enforcement action will be taken. Regulations currently in effect will be enforced and new regulations will be developed to cover discrepancies.
- c. Land Use. Problem noise sources should be identified and abated. Attempts should be made to correct the source of the noise first and if that fails, the land use should be evaluated. In this type of case, the ambient noise level should be determined with the noise source in question out of operation.
- d. Mechanical Equipment. Mechanical equipment such as blowers, air conditioners and exhaust fans installed in new construction or reconstruction of all structures must be located or enclosed such that noise is minimized to the greatest extent possible when they are operating. All existing commercial and industrial units should be required to replace or enclose existing mechanical equipment which is audible beyond the property line plane.
- e. City Operations. The City and all departments should set the example in noise reduction by encouraging the use of noise reducing materials and equipment with lower noise levels. No new equipment should be purchased or leased unless it can be attenuated to at least 60 dBA at 50 feet. Consider methods to reduce siren noise within the city.
- f. City Contracts. Noise levels should be written into all city specifications for contract work including construction, maintenance, and refuse collection.

- g. Sound Transmission. It has long been assumed that people residing in multiple-family dwellings had to live with noise produced by automobile traffic and noise from adjacent units. Thought needs to be given to providing units in apartments or condominiums which will be as quiet as the interior of single-family dwellings. Sound transmission between units in multiple-family dwellings should be minimized to the greatest degree possible. Construction standards which accomplish this should be adopted and enforced on all new construction and conversion of older structures.
- h. Construction Noise. City staff or consultant should research and develop noise standards relative to construction activity. Construction work should not be considered a necessary noise source and standards should address the magnitudes of the noise, not only the hours of operation. At a maximum, construction noise should not exceed the ambient noise level by more than 10 dBA.

SECTION 5.0: MAP OF NOISE CONTOURS

The Government Code establishing the noise element requires noise contours be provided by the agencies responsible for the major transportation facilities. The California Department of Transportation has developed such a map for Laguna Beach. The map shows noise contours ranging down to a low of 45 dBA. In some areas, the ambient noise level would be above 45 dBA from other noise sources, so the contours may be hypothetical.

The contours represent the "mean peak noise level" arising from truck traffic on Coast Highway and Laguna Canyon Road. While this map takes local topography into account, it does not consider any attenuation provided by structures which are outside of the highway right-of-way. With these noise contours it will be possible to determine where proposed land uses are incompatible with noise levels and where corrective actions can be taken to reduce the noise levels. Examples of uses which would be considered incompatible are schools, hospitals, rest homes, and outdoor recreational areas.

The best use of these noise contours can be made by establishing special study zones, or areas of high impact due to highway noise. Any residential projects located within the line of 65 dBA should require noise studies to determine attenuation necessary to reduce interior noise levels to an acceptable level. Building plans should be checked by an

acoustical engineer, as city staff does not have the technical capability.

The accompanying maps show the noise areas of Laguna from traffic on Coast Highway and Laguna Canyon Road. The noise contours are in increments of 5 decibels and the grey shaded area represents the range from 80 dBA to 65 dBA, the areas of highest impact.

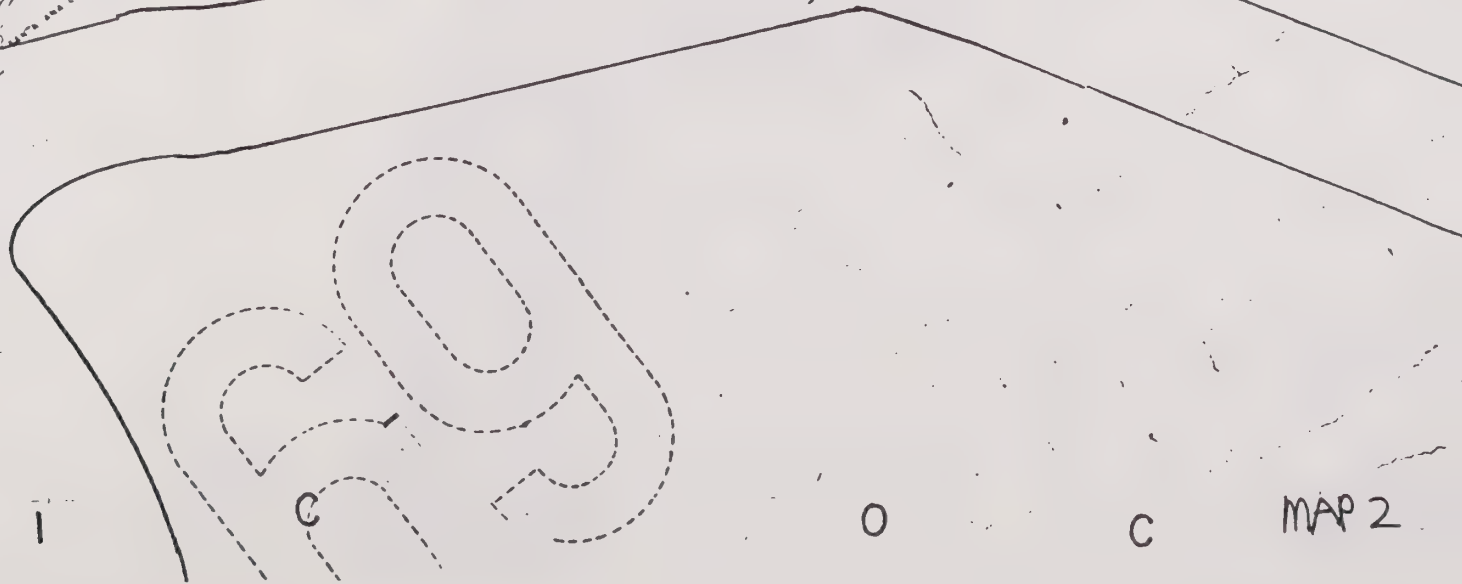
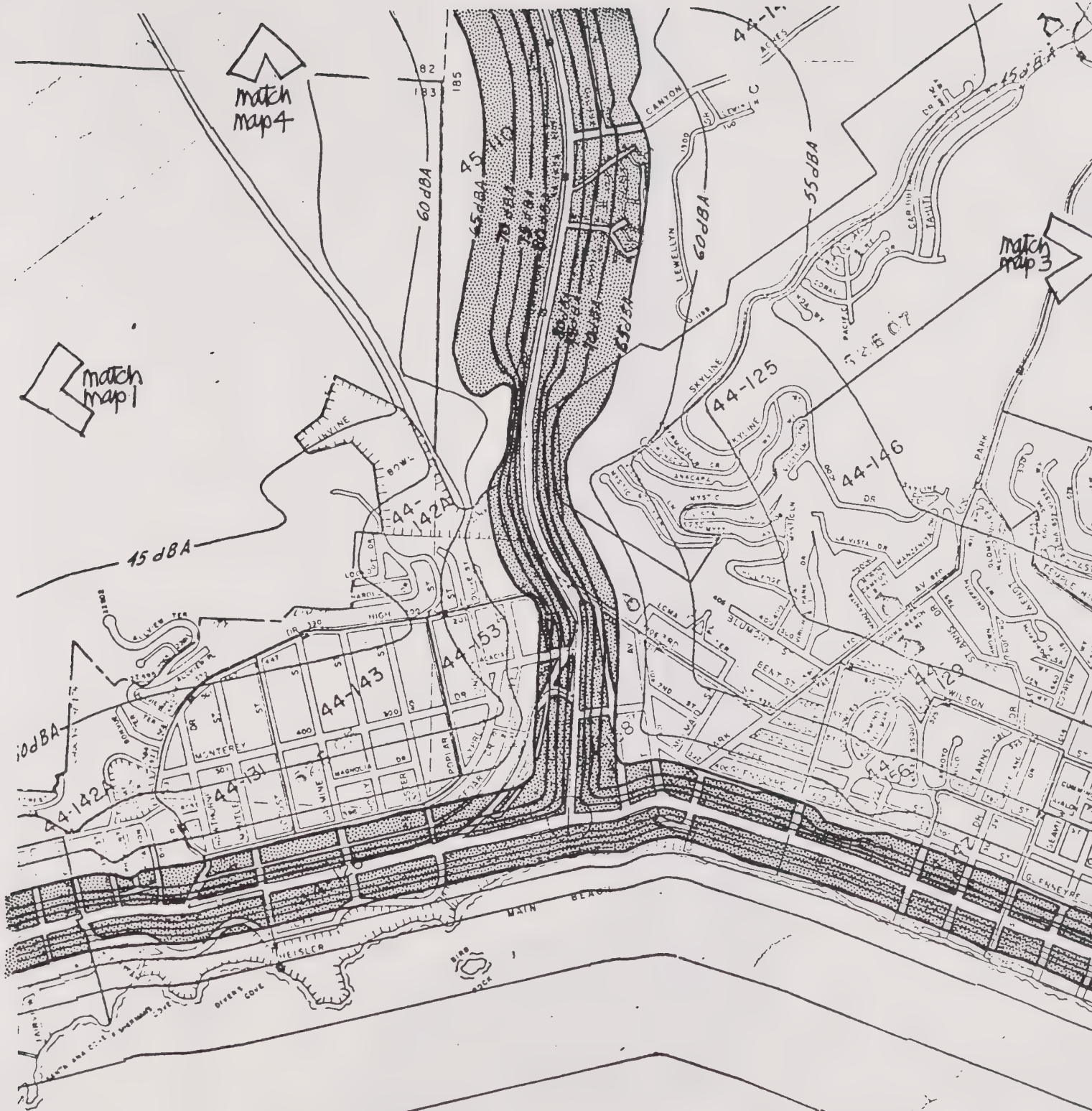




A

N

MAP 3



match
map 5

45-110A

50 dBA

55 dBA

60 dBA

65 dBA

70 dBA

75 dBA

80 dBA

85 dBA

90 dBA

95 dBA

100 dBA

match
map 2

SOME NUMBERS ON PRIVATE ROADS
IN THIS AREA ARE OFF LAGUNA CANYON RD.

45-10

626 07

44-144

R9W
N8W

T7S
T7S

45-109

50 dBA

MAP 4

SECTION 6.0: REVIEW OF EXISTING ORDINANCES

6.1 Municipal Ordinance, Chapter 7.25, NOISE

The city's only recourse against noise (other than noise generated by a use in a manufacturing zone) is contained in this chapter of the code. This deals with everything from construction noise to shouting and yelling in the streets. The standards of noise set forth are subjective, with the only quantifiable limit being a restriction on the time of operations, generally between the hours of six p.m. and seven a.m. The exception to this is found in Section 7.25.030 which states that sound shall not be produced by a radio, phonograph, etc. "between the hours of eleven p.m. and seven a.m. in such a manner as to be plainly audible at a distance of fifty feet from the source...". There is no other standard of measurement other than disturbing the peace of a neighborhood or creating loud and unusual noises. The noise restrictions in this part of the code were developed in an attempt to deal with noise which is generated by other than manufacturing or industrial activities. These noise standards are applied city-wide regardless of zoning designations.

These types of "nuisance provisions are necessary, as they can be enforced on notice by the Police Department without special equipment or technical training. However, since most of our intrusive noises are not industrial, more specific regulations are needed to relate the magnitude of the noise to the problem source. This type of measure is most necessary for construction sites, home occupations, and hobbies.

6.2 Municipal Ordinance, Chapters 25.30.011, 25.32.006

These chapters contain performance standards for the manufacturing zones and establish maximum sound levels which should be audible at the property line. The permissible sound range from maximums of 32 dB at 8,000 cycles per second to 72 dB at 63 cycles per second. There are correction factors for the duration of the noise and the character of the noise. These noise standards were adopted in 1967 but were originally developed by larger cities many years prior to

this. Their original development came when acoustical engineering was a young field and there was still much to be learned about noise and measurement. These standards are not feasible for enforcement because the monitoring equipment to compare frequencies and decibels is very expensive to purchase and is not otherwise available to the city.

The standards for industrial uses have to be tied to a base noise level, which the current standards have not done. Any new noise standards should be tied to the ambient noise level of an area in such a way that the ambient level is not increased. This will mean that any new operations will have to attenuate noise to 3 dB less than ambient at the property line. An ordinance with this type of provision will work for all constant noise sources regardless of zone. The ordinance should contain provisions enabling the city to stop the noise source until the problem can be corrected.

NOTES

1. Senator Mark O. Hatfield, "The Now Sound" Catalyst, Fall 1970, p. 25.
2. CEQA, 1970. See Section cited.
3. Community Noise Control Training Guide and Enforcement Manual, prepared by League of California Cities, p. 2.
4. This information is compiled from article by Senator Hatfield, from background information for the SCAG Workshop on the Noise Element, and from information developed by the Orange County Health Department.
5. Environmental Noise Policy Study, Comprehensive Planning Organization, San Diego, April, 1974.
6. Orange County Health Department, "Noise and the Proposed Orange County Noise Ordinance", October, 1973, p. 16.

APPENDIX I

A Scale A filtering system that has characteristics which roughly match the response characteristics of the human ear at low sound levels (below 55 dB SPL, but frequently used to gauge levels to 85 dB). A Scale measurements are often referred to as dB A .

Acoustical Materials Any material considered in terms of its acoustical properties, commonly and especially a material designed to absorb sound.

Ambient Noise Ambient noise is the characteristic or background noise of a given environment.

Airborne Noise A condition when sound waves are being carried by the atmosphere.

B Scale A filtering system with characteristics roughly matching the response characteristics of the human ear at sound levels between 55 and 85 dB. B Scale measurements are often referred to as dB B .

C Scale A filtering system with characteristics roughly matching the response characteristics of the human ear at sound levels above 85 dB. In this case, the filtering system is flat with frequency. C Scale readings may be referred to as dB C .

Linear Source A linear source is one in which sound is radiated perpendicular to a line under free-field conditions.

Loudness Loudness is the subjective human definition of the intensity of a sound. Human reaction to sound is highly dependent on the sound pressure and frequency.

Loudness Level A subjective method for rating loudness in which 1000 Hertz tone is varied in intensity until it is judged by listeners to be equally as loud as a given sound sample. The loudness level in phons (cq) is taken as the sound pressure level in decibels of the 1000 Hertz tone.

Intensity Level A measure of the acoustic power passing through a unit area expressed on a decibel scale referenced to some standard watt per square meter.

Noise Any undesired sound usually of different frequencies resulting in an objectionable or irritating sensation.

Noise Reduction (1) Reduction in sound pressure level caused by making some alteration to a sound source; or (2) Difference in SPL measured between two adjacent rooms caused by the transmission loss of the intervening wall.

Octave Band A range of frequency where the highest frequency of the band is double the lowest frequency of the band. The band is usually specified by the center of frequency.

Pitch The pitch of sound depends primarily on its frequency. In music, sound of higher frequencies are referred to as treble notes, while those of lower frequency are referred to as bass notes.

Point Source A point source is one that radiates sound uniformly in all directions under free-field conditions.

Pure Tone A pure tone has a unique pitch and is characterized by a sinusoidal variation in sound pressure with time. The frequency spectrum of a pure tone shows a single line at a discrete frequency.

Radiation The process of turning structure-borne noise into airborne (or some other fluid-borne) noise.

Random Noise Random noise is a complex vibration made up of frequencies and amplitudes that vary with time in a random or statistical fashion.

Reverberation Reverberation is the persistence or echoing of previously generated sound caused by reflection of acoustic waves from the surfaces of enclosed spaces.

Sound Deformation waves that are travelling in the air or other elastic materials. It should be noted that sound can be defined as the disturbances themselves or the sensations they produce.

Sound Absorption (1) The process of dissipating or removing sound energy; or, (2) The property possessed by materials, objects and structures such as rooms, of absorbing sound energy.

Sound Level Meter An instrument for direct measurement of sound pressure levels. They are often made with various filtering networks that measure sound directly on A, B, C and other scales. Sound level meters may also incorporate octave-band filters for measuring sound directly in octave bands.

Sound Pressure A fluctuating pressure superimposed on the static atmospheric pressure in the presence of sound. Compared with alternating voltage, its magnitude can be expressed in several ways such as instantaneous sound pressure or peak sound pressure. However, the unqualified term means root-mean-square (rms) sound pressure.

Sound Pressure Level (SPL) A measure of the air pressure change caused by a sound wave. Expressed on a decibel scale referenced to some standard.

Wavelength The wavelength of a sound is the distance between a point of a given phase of one wave and a point of the same phase of an adjacent wave.

APPENDIX II

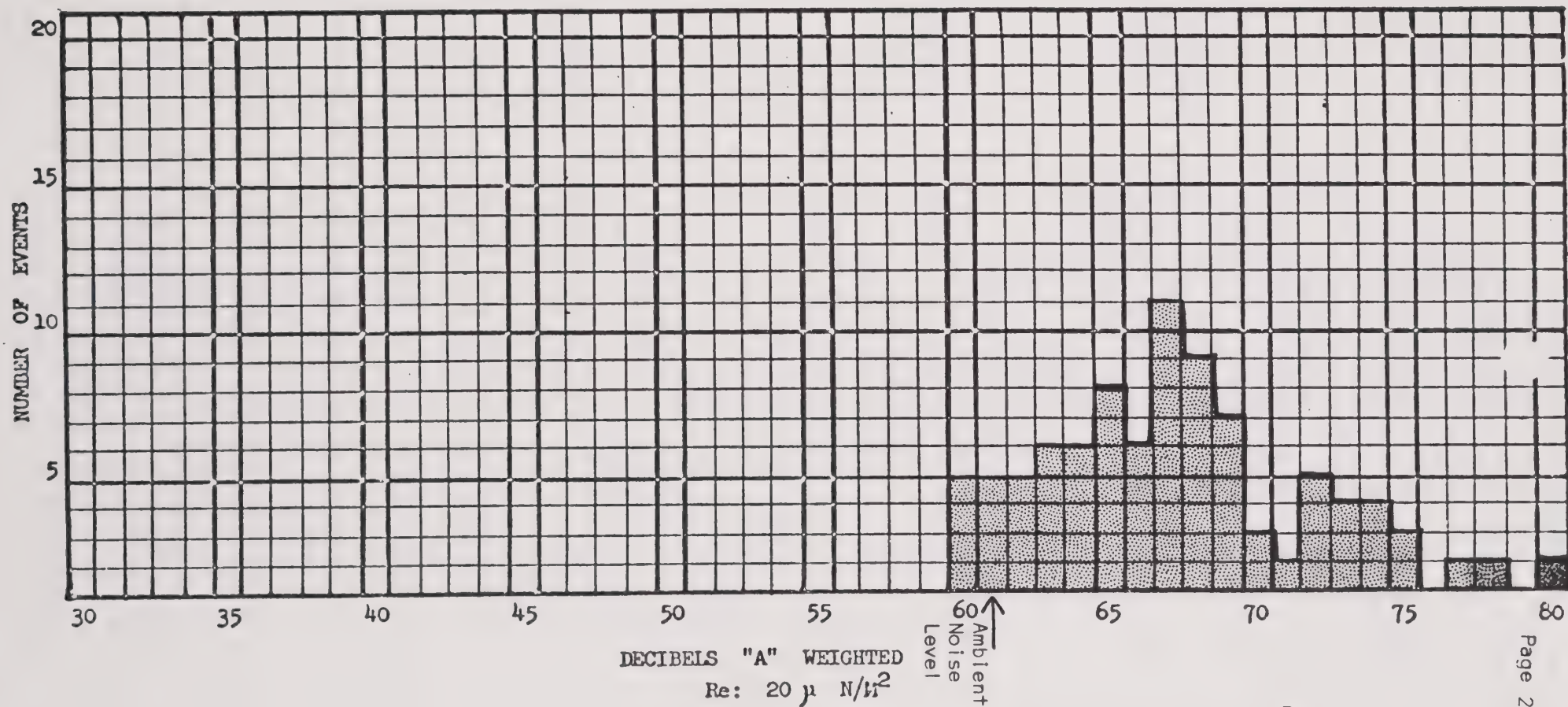
SAMPLE NOISE SURVEY

The following chart (Figure 4) is a sample survey taken by Planning and Development staff on December 11, 1972. A hand-held meter weighted in the "A" scale was used, with recordings of the noise level made every 15 seconds. With these readings, a chart of the noise levels can be made.

The ambient noise level when this reading was made was 61 decibels. This is the level of noise which was exceeded 90% of the time. At this location, it can be assumed that all noise events were made by automobiles. The loudest noises (above 70 decibels) would most likely be the product of diesel trucks and motorcycles.

ORANGE COUNTY HEALTH DEPARTMENT - ENVIRONMENTAL HEALTH DIVISION
P.O. Box 355, Santa Ana, California 92702
Telephone 776-5551

REQUESTED BY _____ ADDRESS _____ PHONE _____
REGARDING _____ ADDRESS _____ PHONE _____
EQUIPMENT _____
LOCATION OF MICROPHONE Beach side of South Coast Highway, between Ocean & Broadway, at curb face
WEATHER Clear, 65° TIME STARTED 10:45 A.M. TIME FINISHED 11:03 A.M.
COMMENTS _____
DATE 12/11/72 SAMPLING INTERVAL 15 seconds LOW 60 MODE 67 HIGH 80



NOI CONTROL ORDINANCE

COUNTY OF ORANGE

AN ORDINANCE ADDING DIVISION 6 TO TITLE 4 OF
THE CODIFIED ORDINANCES OF THE COUNTY OF
ORANGE, CALIFORNIA

The Board of Supervisors of the County of Orange,
do ordain as follows:

SECTION 1. Division 6 is hereby added to Title 4 of
the Codified Ordinances of the County of Orange to read
as follows:

DIVISION 6
NOISE CONTROL
Article 1

Sec. 46.011. Declaration of Policy

In order to control unnecessary, excessive and
annoying sounds emanating from unincorporated areas of the
County, it is hereby declared to be the policy of the County
to prohibit such sounds generated from all sources as
specified in this Article.

It is determined that certain sound levels are
detrimental to the public health, welfare and safety, and
contrary to public interest.

Sec. 46.012. Definitions.

The following words, phrases and terms as used in
this Article shall have the meaning as indicated below:

AMBIENT NOISE LEVEL shall mean the all-encompassing
noise level associated with a given environment, being a
composite of sounds from all sources, excluding the
alleged offensive noise, at the location and approximate
time at which a comparison with the alleged offensive
noise is to be made.

CUMULATIVE PERIOD shall mean an additive period of
time composed of individual time segments which may be
continuous or interrupted.

DECIBEL (dB) shall mean a unit which denotes the
ratio between two (2) quantities which are proportional to
power: the number of decibels corresponding to the ratio
of two (2) amounts of power is ten (10) times the logarithm
to the base ten (10) of this ratio.

EMERGENCY MACHINERY, VEHICLE OR WORK shall mean any
machinery, vehicle or work used, employed or performed in
an effort to protect provide or restore safe conditions in
the community or for the citizenry, or work by private or
public utilities when restoring utility service.

FIXED NOISE SOURCE shall mean a stationary device
which creates sounds while fixed or motionless, including
but not limited to industrial and commercial machinery and
equipment, pumps, fans, compressors, generators, air
conditioners and refrigeration equipment.

IMPACT NOISE shall mean the noise produced by the
collision of one mass in motion with a second mass which
may be either in motion or at rest.

MOBILE NOISE SOURCE shall mean any noise source
other than a fixed noise source.

NOISE LEVEL shall mean the "A" weighted sound pres-
sure level in decibels obtained by using a sound level
meter at slow response with a reference pressure of 20
micronewtons per square meter. The unit of measurement
shall be designated as dB(A).

PERSON shall mean a person, firm, association, co-
partnership, joint venture, corporation or any entity,
public or private in nature.

RESIDENTIAL PROPERTY shall mean a parcel of real
property which is developed and used either in part or in

whole for residential purposes, other than transient uses
such as hotels and motels.

SIMPLE TONE NOISE shall mean a noise characterized
by a predominant frequency or frequencies so that other
frequencies cannot be readily distinguished.

SOUND LEVEL METER shall mean an instrument meeting
American National Standard Institute's Standard S1.4-1971
for Type 1 or Type 2 sound level meters or an instrument
and the associated recording and analyzing equipment
which will provide equivalent data.

SOUND PRESSURE LEVEL of a sound, in decibels, shall
mean twenty (20) times the logarithm to the base ten (10)
of the ratio of the pressure of the sound to a reference
pressure, which reference pressure shall be explicitly
stated.

Sec. 46.013. Noise Level Measurement Criteria.

Any noise level measurements made pursuant to the
provisions of this Article shall be performed using a
sound level meter as defined in Section 46.012.

Sec. 46.014. Designated Noise Zones.

The residential properties hereinafter described
are hereby assigned to the following noise zones.

Noise Zone 1: All residential properties in the
County of Orange, whether incorpo-
rated or unincorporated.

Sec. 46.015. Exterior Noise Standards. (AMENDED
November 13, 1973)

(a) The following noise standards, unless otherwise
specifically indicated, shall apply to all residential
property within a designated noise zone.

NOISE STANDARDS

NOISE ZONE	NOISE LEVEL	TIME PERIOD
I	55 dB(A)	7:00 a.m. - 10:00 p.m.
	50 dB(A)	10:00 p.m. - 7:00 a.m.

(b) It shall be unlawful for any person at any
location within the unincorporated area of the County to
create any noise which causes the noise level when
measured on any residential property, either incorporated
or unincorporated, to exceed:

- (1) The noise standard for a cumulative period of
more than thirty minutes in any hour; or
- (2) The noise standard plus 5 dB(A) for a cumula-
tive period of more than fifteen minutes in
any hour; or
- (3) The noise standard plus 10 dB(A) for a cumula-
tive period of more than five minutes in any
hour; or
- (4) The noise standard plus 15 dB(A) for a cumula-
tive period of more than one minute in any
hour; or
- (5) The noise standard plus 20 dB(A) for any period
of time.

(c) In the event the ambient noise level exceeds
any of the above five noise limit categories, the cumula-
tive period applicable to said category shall be increased
to reflect said ambient noise level. Furthermore, the
maximum permissible noise level shall never exceed the
maximum ambient noise level.

(d) Each of the noise limits specified above shall
be reduced by 5 dB(A) for impact or simple tone noises, or
for noises consisting of speech or music.

Sec. 46.016. Interior Noise Standard. (AMENDED
November 13, 1973)

(a) It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise which causes the noise level when measured within a dwelling unit on any residential property during the period 10:00 p.m. to 7:00 a.m. to exceed:

- (1) 45 dB(A) for a cumulative period of more than 5 minutes in any hour; or
- (2) 50 dB(A) for a cumulative period of more than 1 minute in any hour; or
- (3) 55 dB(A) for any period of time.

(b) In the event the ambient noises level exceeds any of the above three noise limit categories, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. Furthermore, the maximum permissible noise level shall never exceed the maximum ambient noise level.

Sec. 46.017. Special Provisions. (AMENDED
November 13, 1973)

The following activities shall be exempted from the provisions of this Article:

(a) School bands, school athletic and school entertainment events.

(b) Outdoor gatherings, public dances, shows and sporting and entertainment events provided said events are conducted pursuant to a license issued by the County of Orange pursuant to Title 5 of the Codified Ordinances of the County of Orange.

(c) Activities conducted on parks, public playgrounds and school grounds provided such parks, playgrounds and school grounds are owned and operated by a public entity.

(d) Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.

(e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

(f) All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

(g) Mobile noise sources associated with agricultural operations provided such operations do not take place between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

(h) Mobile noise sources associated with agricultural pest control through pesticide application provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the Agricultural Commissioner.

(i) Noise sources associated with the maintenance of real property used for residential purposes, provided said activities take place between the hours of 7:00 a.m. and 8:00 p.m. on any day except Sunday, or between the hours of 9:00 a.m. and 8:00 p.m. on Sunday.

(j) Any activity to the extent regulation thereof has been preempted by State or federal law.

Sec. 46.018. Schools, Hospitals and Churches - Special Provisions.

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use, to exceed the noise limits as specified in Section 46.015 prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three separate locations within one-tenth of a mile of the institution indicating the presence of a school, church, or hospital.

Sec. 46.019. Air Conditioning and Refrigeration; Special Provisions. (AMENDED November 13, 1973)

During the five-year period following the effective date of this ordinance, the noise standards enumerated in Sections 46.015 and 46.016 shall be increased 8 dB(A) where the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of this ordinance.

Sec. 46.0110. Noise Level Measurement

The location selected for measuring exterior noise levels shall be at any point on the affected residential property. In the case of interior noise measurement, the windows shall be closed and the measurements shall be made at a point at least four (4) feet from the wall, ceiling or floor nearest the noise source.

Sec. 46.0111. Manner of Enforcement. (AMENDED
November 13, 1973)

The Orange County Sheriff, the County Health Officer and their duly authorized representatives are directed to enforce the provisions of this Article. The Orange County Sheriff, the County Health Officer and their duly authorized representatives are authorized, pursuant to Penal Code Section 836.5, to arrest any person without a warrant when they have reasonable cause to believe that such person has committed a misdemeanor in their presence.

No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this Article while such person is engaged in the performance of his duty.

Sec. 46.0112. Variance Procedure. (AMENDED November 13, 1973)

The owner or operator of a noise source which violates any of the provisions of this Article may file an application with the Health Officer for a variance from the provisions thereof wherein said owner or operator shall set forth all actions taken to comply with said provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for its accomplishment. Said application shall be accompanied by a fee in the amount of seventy-five dollars (\$75.00). A separate application shall be filed for each noise source; provided, however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of said application and fee, the Health Officer shall refer it with his recommendation thereon within thirty (30) days to the Noise Variance Board for action thereon in accordance with the provisions of this Article.

An applicant for a variance shall remain subject to prosecution under the terms of this ordinance until a variance is granted.

Sec. 46.0113. Noise Variance Board. (AMENDED November 13, 1973)

There is hereby created a Noise Variance Board consisting of five members. Two of the members shall be professional engineers, registered in this State, one of whom shall have demonstrated knowledge and experience in the field of acoustics, the other shall be a registered mechanical engineer. One member shall be a physician licensed in this State qualified in the field of physiological effects of noise; one a representative of business and industry, and one a representative of the general public.

The Noise Variance Board shall evaluate all applications for variance from the requirements of this Article and may grant said variances with respect to time for compliance, subject to such terms, conditions and requirements as it may deem reasonable, to achieve maximum compliance with the provisions of this Article. Said terms, conditions, and requirements may include, but shall not be limited to limitations on noise levels and operating hours. Each such variance shall set forth in detail the approved method of achieving maximum compliance and a time schedule for its accomplishment. In its determinations said Board shall consider the magnitude of nuisance caused by the offensive noise; the uses of property within the area of impingement by the noise; the time factors related to study, design, financing and construction of remedial work; the economic factors related to age and useful life of equipment; and the general public interest and welfare. Any variance granted by said Board shall be by resolution and shall be transmitted to the Health Officer for enforcement. Any violation of the terms of said variance shall be unlawful.

Members of the Variance Board shall be appointed by, and shall serve at the pleasure of, the Board of Supervisors. Said Board shall adopt reasonable rules and regulations for its own procedures in carrying out its functions under the provisions of this Article.

Three members shall constitute a quorum and at least three affirmative votes shall be required in support of any action.

The Health Officer, or his appointed representative, shall be a non-voting ex-officio member of the Variance Board, and shall act as Secretary of the Board.

Meetings of the Noise Variance Board shall be held at the call of the Secretary and at such times and locations as said Board shall determine. All such meetings shall be open to the public.

Sec. 46.0114. Appeals. (AMENDED November 13, 1973)

Within fifteen (15) days following the decision of the Variance Board on an application the applicant, the Health Officer, or any member of the Board of Supervisors, may appeal the decision to the Board of Supervisors by filing a notice of appeal with the Secretary of the Variance Board. In the case of an appeal by the applicant for a variance the notice of appeal shall be accompanied by a fee to be computed by the Secretary on the basis of the estimated cost of preparing the materials required to be forwarded to the Board of Supervisors as discussed hereafter. If the actual cost of such preparation differs from the estimated cost appropriate payments shall be made either to or by the Secretary.

Within fifteen (15) days following receipt of a notice of appeal and the appeal fee the Secretary of the Variance Board shall forward to the Board of Supervisors copies of the application for variance; the recommendation of the Health Officer; the notice of appeal; all evidence concerning said application received by the Variance Board and its decision thereon. In addition any person may file

with a Board of Supervisors written arguments supporting or attacking said decision and the Board may in its discretion hear oral arguments thereon. The Clerk of the Board shall mail to the applicant a notice of the date set for hearing of the appeal. The notice shall be mailed at least ten days prior to the hearing date.

Within sixty (60) days following its receipt of the notice of appeal the Board of Supervisors shall either affirm, modify or reverse the decision of the Variance Board. Such decision shall be based upon the Board's evaluation of the matters submitted to the Board in light of the powers conferred on the Variance Board and the factors to be considered, both as enumerated in Sections 46.0112 and 46.0113.

As part of its decision the Board may direct the Variance Board to conduct further proceedings on said application. Failure of the Board of Supervisors to affirm, modify or reverse the decision of the Variance Board within said 60-day period shall constitute an affirmation of the decision.

Sec. 46.0115. Violations: Misdemeanors. (AMENDED November 13, 1973)

Any person violating any of the provisions of this Article shall be deemed guilty of a misdemeanor. Each day such violation is committed or permitted to continue shall constitute a separate offense and shall be punishable as such. The provisions of this Article shall not be construed as permitting conduct not proscribed herein and shall not affect the enforceability of any other applicable provisions of law.

SECTION 2. Section 46.0116 is hereby added to the Codified Ordinances of the County of Orange to read as follows:

Sec. 46.0116. Delay in Implementation. (ADDED November 13, 1973)

None of the provisions of this Article shall apply to a fixed noise source during the period commencing October 19, 1973, and terminating ninety (90) days thereafter.

SECTION 3. This Ordinance shall take effect and be in full force thirty (30) days from and after its passage, and before the expiration of (15) days after the passage thereof shall be published once in the San Clemente Sun-Post, a newspaper published in the County of Orange, State of California, together with the names of the members of the Board of Supervisors voting for and against the same.

RONALD W. CASPERS
Chairman of the Board of Supervisors of
Orange County, California

(SEAL)

ATTEST:

WILLIAM E. ST JOHN
County Clerk and ex-officio Clerk of the Board
of Supervisors of Orange County, California
By JUNE ALEXANDER, Deputy

STATE OF CALIFORNIA }
COUNTY OF ORANGE } ss.

I, WILLIAM E. ST JOHN, County Clerk and ex-officio Clerk of the Board of Supervisors, do hereby certify that at a regular meeting of the Board of Supervisors of Orange County, California, held on the 13th day of November, 1973, the foregoing Ordinance containing three sections was passed and adopted by the following vote:

AYES:	SUPERVISORS	R. W. BATTIN, RONALD W. CASPERS, DAVID L. BAKER, RALPH A. DIEDRICH AND RALPH B. CLARK
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NOES:	SUPERVISORS	NONE
ABSENT:	SUPERVISORS	NONE

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Board of Supervisors of the County of Orange, State of California, this 13th day of November, 1973.

WILLIAM E. ST JOHN
County Clerk and ex-officio Clerk of the Board
of Supervisors of Orange County, California
By JUNE ALEXANDER, Deputy

(SEAL)

Publish San Clemente Sun-Post, November 23, 1973

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